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Migrant Heterogeneity and Urban Development:

A Conceptual Analysis

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1. Cities and Migrants

The increasing travel possibilities and lower real costs of transport, information, and communication due to ICT development, have not led to what has been called the 'death-of-distance' for economic activities. On the contrary, rather than becoming increasingly irrelevant, location choice seems to be more important than ever. Obviously, the agglomeration of economic activities induces high housing prices and negative externalities such as congestion and pollution (air, noise). So, why then do firms and workers continue to concentrate in urban areas?

In the field of economics, the explanation most often given for the apparent attractiveness of cities is that cities give rise to productivity externalities (see, for example, Glaeser et al. 1992). That is: firms profit from being close to other firms because of information spillovers (Jacobs externalities), the existence of a market for specialized intermediate inputs (Marshallian externalities), or increased efficiency and innovation induced by nearby competitors (Porter externalities). Higher productivity results in higher wages, which attracts workers in search of jobs, which in turn attracts firms wanting to benefit from a large pool of (skilled) workers.

An alternative explanation for the attractiveness of cities is that cities provide a higher number of consumer amenities, making them good places to live. We define amenities as all tangible and intangible consumer-related features of a location that makes it an attractive area in which to live. Researchers such as Glaeser et al. (2001), Glaeser (2010), and Graves (1980) point at (natural) amenity-led growth of urban regions. They stress the importance of climate (weather and natural scenery), but also the broad availability of consumer goods and the presence of

restaurants or theatres in larger urban areas that attract people who value those amenities and derive a higher utility from living together in these areas.

As far as consumption is concerned, the death-of-distance hypothesis is proven false, too. Glaeser et al. (2001) find that, although the death-of-distance hypothesis may be true for manufactured goods that can be easily bought via the Internet and shipped all over the world, non-tradable private goods, such as restaurant and theatre visits, but also public goods like schools remain highly local. The increase in reverse commuting (or 'counter-muting') – living in the city centre and working in a more suburban area – is a good illustration of the impact urban amenities might have on location decisions.

So both production and amenity externalities can explain why firms or people (workers and consumers) want to locate in urban areas. Ultimately, the challenge is to understand the location choice of workers (consumers) and firms (producers) in their interrelatedness. We know that higher productivity increases wages, and a higher number of amenities increase house prices, since workers are willing to pay for places that provide more consumer amenities. This leads to spatial sorting because people with higher wages can afford to pay higher house prices. We also have some evidence (see, for example, Partridge, 2010) that firms increasingly follow people, thereby further increasing productivity in cities. This agglomeration process increases prices, land rents, and wages simultaneously. Clearly, there is an important causality issue here on who follows who in location decisions (workers or firms), and this issue has been extensively investigated in the literature (see, for example, Boarnet 1994; Boarnet et al. 2005; Deitz 1998; Glaeser et al. 2001; Graves 1980; Greenwood and Hunt 1989; Partridge 2010; Steinnes 1977, 1982; White 1999; and Vermeulen and Van Ommeren 2009 for an analysis for the Netherlands).

The economic magnet function of cities makes them a pulling force for international migrants. We are witnessing a rapid growth of thriving and increasingly culturally diverse cities in the entire world. The spatial cluster patterns of migrants are so strong that one can reliably predict where new immigrants will locate on the basis of the location of the stock of immigrants, with the same ethnicity, in the destination country (Bartel 1989; Card 2009). One of the reasons for this is the presence of migrant social networks that can be used to find a job or a house. The presence of other migrants in an area also creates a network that supports the demand and supply of their home-country products.

On the one hand, these effects are hypothesized to be positive for economic development. Diversity of labour increases productivity because different people tend to 'learn from each other' (Jacobs externality). Migrants increase the supply of a specific kind of amenity in cities – we will refer to these amenities as migrant-induced (cultural) amenities – that influence the product variety for all people living in that area.

On the other hand, the diversity of people in cities does not come about without some frictions and costs. Too much social variety may lead to interaction problems by increasing the costs of communicating, thus leading to the fractionalization of society (the "Babylon effect": see Florax et al. 2005). Heterogeneity can also generate costs if it results in racism and prejudice (Abadie

and Gardeazabal 2003), and if it leads to conflicts of preferences over public spending (Alesina et al. 1999; Alesina et al. 2004). Social cohesion in a diverse society might also decline, because the development of trust is more difficult to foster (Alesina and La Ferrara 2002). Putnam (2007) argues that diversity might decrease both bonding and bridging social capital. This means that people living in a diverse society turn neither to their fellow natives nor to other ethnicities, but just refrain from participating in society altogether.

In this chapter we will examine the contribution of migrant heterogeneity to the attractiveness of cities (for a general migrant impact analysis see Bakens and Nijkamp 2010). To this end, we will discuss various aspects of the literature on city (consumer) amenities and productivity amenities and the role of migrants in these processes. In the remainder of this chapter, we will first discuss the impact of migrant diversity on labour productivity and the various mechanisms through which this relation is established. Then we will discuss amenity-led location behaviour, and the impact a diverse city population might have on the variety of products offered in a city. Finally, we will outline a research agenda, and describe the data needed for further research.

2. Connecting People: Cultural Diversity and Productivity

The general claim that diversity has a positive impact on productivity is based on the work of Jane Jacobs (1961, 1969). She states that the clustering of heterogeneous industries leads to higher economic growth in cities, because ideas or insights from one industry are exchanged and applied in another industry, leading to new ideas and innovations. Glaeser et al. (1992) used these insights to test for agglomeration externalities in cities and found affirmative evidence for Jacobs externalities. De Groot et al. (2009) find in their meta-analytic study on agglomeration externalities that industry diversity (Jacobs externalities) tends to have a positive effect on economic growth in cities.

In research about the impact of migrants on productivity, the above mentioned Jacobs externalities are adapted to the diversity of workers on the city or firm level. As with the diversity of industries or firms, a diverse labour force[1] increases the number of ways that problems are framed, thus producing a richer set of alternative solutions, and consequently innovations, and a higher productivity. If Jacobs externalities are considered to have an impact on labour productivity as a result of the exchange of ideas, social structures should be the main focus of research. The ability of people to interact in social networks is considered to be their social capital. Following the definition of Akçomak (2010), social capital is created by the

[1] In most of the research concerning productivity impacts, the degree of diversity in the labour market is expressed by a fractionalization index (see, for example: Alesina and La Ferrara 2005; Bellini et al. 2011; Ottaviano and Peri 2005, 2006; Ozgen et al. 2010, 2011; Suedekum et al. 2009). A culturally diverse region is then a region in which the probability is relatively high that two randomly selected individuals from the region's population are from a different nationality or cultural background. Although the fracionalization index is most often used in this type of research, one can think of other measures that differentiate among groups and/or regions to indicate concentration, specialisation or inequality (like Herfindahl index or GINI-coefficient, to name a few) that could be applied in this field of research. More on this topic can be read in, for example, Maignan et al. (2003) who compare bio-ecological measures of diversity with economic measures of diversity. In section 4.2 of this chapter we discuss issues concerning the measurement of culture itself.

relations between individuals. Thus, it is not the human capital individuals possess personally like skills and knowledge that is the focal point of research, but the capital they can acquire in interacting with other people. The social contacts that workers have and the social groups with which they interact are a crucial part of the human capital accumulation and human capital spillovers across people. To our knowledge, not much research within the field of urban economics has been conducted on the social networks between migrants and native workers in urban areas in order to analyse Jacobs externalities.

These ways of looking at the impact of migrants on labour productivity is complementary to the neoclassical approach of migration. From the neoclassical point of view, migration is seen as the result of the mobility of production factors and different factor prices between distinct regions. The impact of migrants on the host country's labour market can then be described quite elegantly: labour markets respond to a positive labour supply shock through the adjustment of wages and employment (i.e. a crowding-out effect if migrants are substitutes for the native workers).

In a series of meta-analytical studies[2], Longhi et al. (2005a, 2005b, 2008, 2010) have estimated the average impact of immigration on the labour market by looking at the adjustment in wages and employment. The studies show that the impact is, if significant at all, only very small. If the ratio of immigrants to native workers increases by 1 percentage point, the wages of native workers decrease by 0.119 percent (Longhi et al. 2005a), and a 1 percent increase in the ratio of immigrants to native workers decreases the employment of native workers by 0.024 percent (Longhi et al. 2005b). So, in theory, wages and employment of the native workers would, ceteris paribus, decline due to a migrant influx, but in practice, this does not seem to be the case due to heterogeneity and complementarity among production factors, and due to complex wage adjustments if there is a tight labour market.

In the above mentioned research it becomes clear that the impact of migrants on the labour market crucially depends on the geographical coverage and scope of the labour market (see also Longhi et al. 2010). Statistically significant negative impacts of immigration occur relatively more frequently in those studies that focus on large geographical labour markets (e.g. a country versus the different regions within that country). When focusing research on a small labour market, the adjustment effects in the economy such as native regional out-migration, changes in sectoral and trade composition, an increase in consumption expenditures, but also impacts on productivity, innovation and social structures, might be better identified with the data (see Longhi et al. 2008, 2009).

In accordance with neoclassical theory, the impact of migrants on the host country's national labour market thus seems rather trivial, but recently the focus of research on the impact of

[2] Meta-analysis requires the acquisition of a cluster of applied modelling studies concerned with the same research question and the use of a common econometric specification, in order to draw a general quantitative synthesis conclusion.

migrants has shifted towards a less aggregate level: the differential impact of migrants on local or regional scales. On a more disaggregate level, migration – or in a more general sense, increasing cultural diversity – may have an impact on socio-economic dynamics in the local or regional economy beyond the neoclassical framework.

Some research has been conducted that focuses on Jacobs-like externalities of migrants. Based on their research on the US labour market, Ottaviano and Peri (2006) conclude that productivity and economic growth rises when the diversity of workers increases in US cities. Ozgen et al. (2010) have found in a meta-analytic study that a 1 percentage point increase in the net migration rate increases real income per capita by 0.1 percent. When focussing on the relationship between the diversity of nationalities in a population and innovation, Ozgen et al. (2011) find a positive relation between the share of foreigners in the population and the number of patent applicants of 0.23 percent. The results indicate that the composition of the migrant population, i.e. the nationalities of the migrants, influences the innovative capacity of European regions. Their research shows that a unit increase in the (Simpson) diversity index (see footnote 1), increases patent applications by 2.2 percent.

Suedekum et al. (2009) analysed the impact of migrant heterogeneity on German NUTS-3 level labour markets. They find that cultural diversity has a positive impact on the German labour market, and particularly highly skilled immigrants increase local labour productivity. Low-skilled immigrants have a negative effect on local wage and employment. An interesting finding in this research is that the largest negative effects of immigrants on German labour markets are to be found in regions with a large and culturally homogeneous group of unskilled immigrants. In the US, Borjas (2005), CCSCE (2005) and Orrenius and Nicholson (2009) find that, on average (in the long run), the impact of immigrants on the receiving region's employment and wage rates is positive, while only very small substitution-effects between natives and immigrants are observed. The largest negative effect of immigrants is on the wages of earlier immigrant cohorts. In New Zealand (Strutt et al. 2008), the influx of immigrants has caused wages and employment to decrease for some native-born workers and earlier migrant cohorts for whom new migrants are close substitutes in the labour market. Research by Econtech (2006) in Australia shows that an increase in the influx of high-skilled immigrants has led to negative transition effects in the short run, but to positive labour market effects in the long run; labour force participation, employment. and skill level have increased.

The influence of cultural diversity on labour productivity is thus determined by the possibility for people from different cultures to meet and interact with each other in their workplace, neighbourhood, or school. Some of the abovementioned literature measures the presence of migrants in areas and concludes that the presence of migrants increases productivity. But, the presence of migrants alone does not lead to productivity externalities of the kind described in this section. Interaction among people from diverse cultures or between the firms in which these people work is a requisite for these kind of productivity externalities. This assumes that on an disaggregate micro-level – the neighbourhood and workplace – research should focus on the

probability of people from a different culture to meet and interact to determine the influence of cultural diversity on labour productivity.

3. Quality of Life: Cultural Diversity and Consumption

As described above, much research has focused on the impact of cultural diversity on labour productivity. Externalities of cultural diversity, especially in urban regions, can also be directed towards consumption. Although earlier work on agglomeration externalities has (also) focussed on the amenities of product diversity in cities (e.g. Jacobs 1961, 1969; Roback 1982), the interest in consumption amenities in cities has revived in the last decade. This is mainly because some cities in the US and Europe saw an unprecedented rise in prices that cannot be fully explained by an increase in productivity or income (Glaeser et al. 2001; Glaeser 2010). This means that besides the productivity amenities that cities can provide, people are willing to pay high rents for other externalities in cities, in particular quality of life.

In general, in areas with migrant communities, a supply chain of goods from the home country of these migrants arises. So, the presence of migrants who demand and/or produce their home-country products increases the product variety in that location. Examples are numerous, but one can especially think of non-tradable private goods, such as Italian or Japanese restaurants, Chinese supermarkets, or ethnic clothing stores. Consequently, the diversity of the goods and services offered in cities with migrants might increase the utility of living in those cities for all workers. If the utility of living in heterogeneous cities is higher, then more people may want to live and work there, thus boosting the economic development of the city.

In their research, Glaeser et al. (2001) show that the valuation of amenities in cities has increased over the years. In London and Paris, the amenity premium has risen due to a faster increase in rents than in wages. If wages had risen faster, this would have suggested that the willingness to live in cities is caused by the gain in productivity. Partridge (2010) has indicated that over the past 50 years, migration within the US can indeed best be explained by natural amenities-led growth. The Sunbelt and parts of the Rocky Mountains appear to have attracted relatively many more workers than the largest US metropolitan areas, whereas the former standard core-periphery patterns explained according to the NEG (New Economic Geography)-models have not been confirmed in this research.

The attractiveness of product heterogeneity is also the concept behind the ‘love of variety’ in Fujita et al. (1999). Other models that look at the willingness-to-pay for amenities or the utility derived from living in a certain area are equilibrium models based on the work of Roback (1982). Equilibrium models inspired by Roback (1982) have been used in different modifications to identify whether the productivity or amenity externality prevails in urban areas, and to calculate the valuation of a specific amenity. The general insight of the model is that the value people assign to city amenities is a premium over the rent minus the wage (see also Glaeser et al. 2001).

Table 1: Identification strategies

		Rent variation	
		Positive	Negative
Wage variation	Positive	Positive productivity effect	Disamenity effect
	Negative	Amenity effect	Negative productivity effect

Source: Bellini et al. (2011).

With this way of testing productivity and amenity premiums, four different situations can be distinguished as is described in chapter 7 by Bellini et al. (2011). Table 1 displays these situations. Only if a positive rent variation is combined with a negative wage variation, are amenities the cause of higher employment density in a region.

The basic Roback model (1982) is a model with many cities that vary according to the quantity of an endowment amenity. Both the indirect utility and the production are a function of wages, rents, and amenities. Wage and rent differences can thus be characterized as functions of the amenity in the equilibrium situation (with a given distribution of firms and workers across cities). The model can be extended by including a non-tradable goods sector. In the initial model, workers are identical in their tastes and skills, but Roback (1988) allows for heterogeneity in individual preferences. Dalmazzo and Blasio (2010) use this model to analyse the valuation of urban amenities among different skill-groups in Italy. They find a substantial urban rent premium, but no urban wage premium, indicating that urban amenities are important drivers for urban agglomeration. This seems especially the case for high-skilled people, who apparently attribute a higher utility to shopping possibilities and cultural consumer goods (theatres, etc.). This is in line with the general view that consumer amenities only become important for location choices after a certain income threshold is reached.

Ottaviano and Peri (2006) took the Roback model as a starting point to model the influence of cultural diversity on production and consumption. Estimating the wage and rent specifications, and controlling for personal characteristics and city fixed effects results in positive and significant estimates for cultural diversity (measured by country of birth) in the US. For the simplest model, an increase in the diversity index of 0.1 is associated with an increase in average real wages of US natives of 13 percent, and an increase in real rents of 19 percent. The same model specification is used in Bellini et al. (2011), but applied to European data where the authors find roughly the same results.

Quigley (1998) lists some more amenities specifically linked to urban diversity. Because of the economies of scale in a city, the provision of public goods, such as parks and sports stadiums, are more easily provided. Shared inputs produce more differentiated goods in theatres, restaurants, fashion, and the like. Search costs for consumers are lower in cities that allow for the agglomeration of products in, for example, shopping districts. And cities are better able to provide substitute goods in cases of economic fluctuations.

In this section, we have shown that theoretical frameworks have been developed that can test whether workers value certain amenities, and whether the urban amenities or productivity amenities prevail in the location choice of workers/consumers. The role of migrants in providing product heterogeneity has received some attention within the field of economic research, but the majority of the research on migration has focussed on productivity effects. To our knowledge the research that has been conducted does not take into account data of product variation in cities. Thus the implicit assumption in this research is that the presence of migrants increases product heterogeneity and people value this. Hence, an area that needs further research is the impact of migrant diversity and migrant-induced product heterogeneity in cities on the utility of living in that city by using data on product variation.

4. Conceptual Framework and Methodology

4.1 General framework

In the previous two sections, we have explained that cultural diversity in a city can be seen as an amenity for its inhabitants from a consumer point of view, and that cultural diversity influences productivity by means of human capital accumulation and the exchange of ideas. Figure 1 gives a summary of the causalities and relations described in the previous sections.

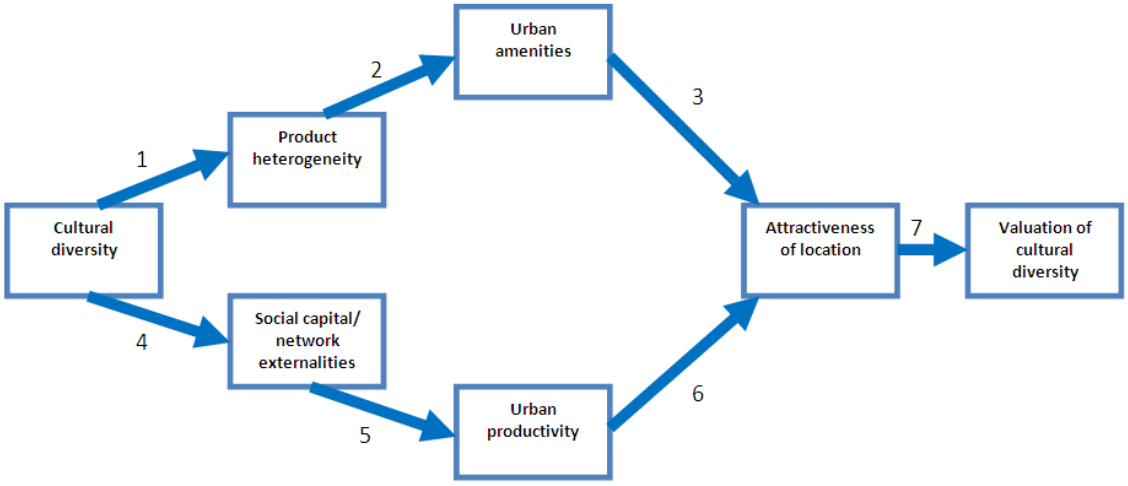

Figure 1: Relation between cultural diversity and attractiveness of locations

Arrow 1 indicates the effect of cultural diversity in a city on product heterogeneity due to the supply of foreign products initially primarily demanded by migrants. If shops and restaurants arise to sell these products, the product variety increases for all people living in that area. According to the 'love of variety' (Fujita et al. 1999), and the work of, among others, Glaeser (2010), product variety can be seen as a positive feature of a location, and can thus be labelled a urban amenity, as is indicated by arrow 2. Arrow 3 shows this causality and indicates that urban amenities increase the attractiveness of a location.

The productivity side of the model shows that cultural diversity in a city influences the networks and the social capital of people either in the workplace or in the neighbourhood (arrow 4). Arrow 5 shows that this can lead to urban productivity gains if Jacobs externalities arise (Jacobs 1961, 1969; Ozgen et al. 2010, 2011; Ottaviano and Peri 2005, 2006). A more productive city is an attractive area for other people to locate and find a job, as is indicated by arrow 6. Arrow 7 shows that, within this figure, the attractiveness of a culturally diverse location ultimately indicates people's value of cultural diversity.

The different hypotheses stated in the literature and implicitly stated in Figure 1 are summarized in Table 2. The two main hypotheses that indicate positive effects deduced from the literature are:

1. Interaction of people from different cultural groups in neighbourhoods and/or at work increases their productivity.
2. People attribute a higher utility to living in areas with migrant-induced culturally heterogeneous goods.

In the wage equation, cultural diversity is based on the probability of interacting with people from a different cultural group, and thus on the number of migrants in the neighbourhood and at the firm level. In the rent equation, first the relationship between cultural diversity in an urban area and the number of culturally-induced different non-tradable (private) goods available in the city needs to proved. Next, the valuation of workers of these culturally-induced amenities needs to be calculated in accordance with the valuation of other amenities.

Though these hypotheses cannot considered to be a very novel way of looking at the effects of migrants on local economies, there are different, empirically novel ways of testing them that will certainly give better and new insights into the described mechanisms. One of these ways is to test the hypotheses simultaneously in a Roback-like model in order to look at the impact of cultural diversity on production and consumption. Another way is to use data on product variety to research the impact of migrants on amenities in cities, and determine whether these culturally-induced amenities increase the utility of living in these cities. Additionally, the use of micro-data allows for the analysis on different spatial levels to see on which levels (cities, firms, neighbourhoods) these externalities occur. With micro-data one can actually measure whether people from different cultures interact in the workplace or neighbourhood, and whether city inhabitants attribute a high utility to migrant-induced product heterogeneity.

Table 2: Effects of cultural diversity on production and consumption*

	Positive effect	Negative effect
Urban productivity	Jacobs externalities Bridging or bonding of social capital	Babylon effect No bridging and no bonding of social capital
Urban amenities (consumption)	'Love of Variety'	Suboptimal decisions on public good provisions

*Based on the effects mentioned in this chapter and on Baycan-Levent (2010).

Using micro-data marks the emergence of a new field within economic research. Detailed 'micro'-administrative databases, sometimes longitudinal, are becoming more and more available and allow research on a far more detailed level. These databases allow us to better describe the adjustment processes at work in, for example, local labour markets, but also other dynamics associated with migration.

Additionally, using micro-data allows for the observation of spatial sorting. When focussing on the location behaviour of individual workers on a neighbourhood level, all kinds of selection effects can be controlled for. Not only can the amenities be considered, but the negative effects of cultural diversity in neighbourhoods can be addressed, and differences between groups of people in their valuation of amenities can be accounted for, and one can also control for the productivity premiums in different regions.

Below we elaborate on two methodological aspects of this kind of research: the measurement of culture and endogeneity problems, because in the research described in this chapter, in general, these two aspects form a weaker spot or at least allow for intense debate on what is exactly researched. The measurement of culture and endogeneity problems each need more attention in future research from a theoretical, empirical, and methodological point of view.

4.2 Measuring culture[3]

Other disciplines like sociology and anthropology have a tradition of research on culture and cultural differences on different levels of aggregation. In the field of economics, the impact of 'culture' on economic processes has led to a focus on concepts like institutions (for example, North 1990), trust (Alesina and La Ferrara 2002), or social capital (Putnam 2000). In the research described in this chapter very simple, easy observable, and objective measure of culture are used. One of the reasons is that the analytical tools of economic analysis do not easily allow for endogeneity problems that stem from measures of culture that are less easy to disentangle from other individual characteristics or environmental influences.

So the question is: what is a meaningful and possible way of measuring culture given how it is hypothesized to affect economic processes? Culture is often referred to as being very persistent over time. Therefore, to distinguish between cultures in research on the effects of cultural diversity on economic outcomes, concepts of culture that are consistent over time like nationality, country of birth, language, race, or religion are often used. These concepts are not used to estimate the impact of different countries of birth on productivity per se, but country of birth is used as a proxy for differences in norms, beliefs and all kinds of unobservable variables that constitute a culture and might lead to economic externalities.

[3] It is beyond the scope of this chapter to discuss extensively different definitions and views on culture. We only focus on measuring culture relevant for the impact of migrant diversity on economic outcomes.

Identifying cultural groups like this has some theoretical and methodological drawbacks (see Bellini et al. 2011). Nationality and country of birth are rather objective and easily obtainable measures. However, nationality is subject to intergenerational erosion making it likely to underestimate diversity in a society[4]. Nationality and country of birth are predominantly self-claimed identities and can change over time. In countries with large groups of migrants from, for example, former colonies, measuring cultural diversity by nationality might underestimate the effect of migrants, since generally migrants from former colonies have obtained (or obtain) the host country's nationality quite easily. Whereas language spoken at home (Ottaviano and Peri 2005) is a good indicator for one's identification with a subculture, this might not be the case in all countries, especially with languages like Spanish and English. Falck et al. (2010) show that on the basis of data from Germany, dialects, i.e. language variation within a country, can be a very powerful tool for explaining cultural differences within a country.

This research shows that even a 'simple' variable such as language has different dimensions, and if a person reports speaking German at home, it is important to know which dialect in order to know that individual's cultural identity. Religion and race roughly have the same advantages and disadvantages as language, meaning that, in general, they can be measured reasonably simply, but this can imply, on the one hand a very broad indication (religions and races spread across continents), and, on the other, a very narrow indication (religions have numerous bifurcations and mixtures). The use of social value surveys can however help to identify cultures based on less general measures, but these measures are less objective and quantifiable leading to possible endogeneity bias in estimating the effect of cultural diversity on economic processes. Future research that will further conceptualize the concept of culture from an economically useful point of view would be very welcome.

4.3 The endogeneity bias and unobserved heterogeneity

In most of the research done in this field, the main source of bias in identifying the effect of cultural diversity on productivity and consumer amenities is endogeneity of independent variables. Whether productive people locate in urban areas or urban areas make people more productive, and whether firms follow workers or workers follow firms, are all difficult causalities to investigate[5]. When the causality between an independent and dependent variable in a model can also be reversed, for example the correlation between the migrant heterogeneity in a firm and the productivity of that firm, the independent variable is correlated with the disturbance term. In regression models, this makes the Ordinary Least Squares (OLS) estimator inconsistent and biased. The econometrical solution for the correlation between the independent variable and the disturbance term is to use a randomized controlled experiment (that is not feasible in this setting because of ethical objections), quasi-natural experiment, or an instrumental variable in a two stage-least-square (2SLS) model.

[4] Sometimes, country of birth of the parents is used to overcome underestimation of diversity.

[5] See for example Combes et al. (2011) on these issues concerning the identification of agglomeration effects.

The best way to deal with the endogeneity bias is to base research on effects of migrant diversity on the receiving economy on a quasi-natural experiment. An experiment can be a policy shift, natural disasters or any exogenous shock to the system. A much cited quasi-natural experiment is the Mariel boatlift (Card 1990), in which the impact on the Miami labour market of a sudden increase of the labour force by 7% by the arrival of about 125,000 Cubans in 1980 is analysed. In chapter 8, Bauernschuster et al. (2011) use the reunification of Berlin as a quasi-natural experiment to analyse the impact of the difference in implicit institutions between east and west Germany on individual decisions to become an entrepreneur.

Since quasi-natural experiments are often difficult to encounter, many researchers produce interesting instrumental variables to deal with the endogeneity bias. A good instrument is a variable that is uncorrelated with the disturbance term, so not correlated with the dependent variable, but is correlated with the endogenous independent variable. In a 2SLS model, each endogenous regressor needs at least one instrument. Time-lagged variables can serve as instruments although one can argue whether these instruments are exogenous. Card (2001) introduced a shift-share methodology for constructing instruments that build on, for example, past shares of migrants from a certain background in a city to predict the future inflow of these migrants in the city (as used in Bellini et al. 2011; Ottaviano and Peri 2005, 2006) Ottaviano and Peri (2005, 2006) also use the distance of a city to the main gateways into the US as instruments for the diversity of that city. Ozgen et al. (2011) use the presence of McDonalds restaurants to instrument the openness and international connectedness of regions to deal with the endogeneity bias of immigration. One of the instruments Suedekum et al. (2009) use, is the regional vote shares for the Green party in national elections to proxy for the tolerance level of natives towards foreigners in a region.

The access to micro-data also provides opportunities for research set-ups that can (partly) deal with the endogeneity bias. With longitudinal micro-data, the location decisions of workers can be analysed over time. Secondly, modelling wage and rent equations simultaneously provides some insight into which effect is stronger: productivity or amenities. Thirdly, focussing on reverse commuting and different aggregate spatial levels might be a good identification strategy for regressing the impact of cultural diversity on productivity or consumer amenities.

It is also important to note that, in research on productivity or urban amenities, there are many worker and city specific characteristics that we do not observe (unobserved heterogeneity) but might explain part of the correlation between cultural diversity on the one hand and urban productivity and amenities on the other hand. It is obvious that controlling for education, income, skill level or any form of human capital of workers when estimating the impact of cultural diversity on productivity, is crucial for the results (see, for example, Alesina and La Ferrara, 2005; Bellini et al., 2008; Münz et al., 2006; Ottaviano and Peri, 2005, 2006; Ozgen et al., 2010; Pekkala Kerr and Kerr, 2008; Saxenian, 2007; Strutt et al., 2008; Suedekum et al., 2009). Likewise, cities have certain characteristics besides cultural diversity that make them attractive locations for workers or consumers. When data on these characteristics is unknown (or

unobservable), but these characteristics vary across cities and/or workers and are invariant over time, the unobserved heterogeneity can be controlled for by using fixed effects in panel data as long as the cultural diversity in a city or firm varies over time.

5. Conclusions

The appeal of cities as magnets for productive firms and workers, and as places with a broad product variety for consumers, has encouraged many researchers to examine the processes at work that make cities such attractive locations to settle. International migrants have been shown to have a preference for settling in urban regions, and, in this chapter, we have shed light on the effects of the presence of migrants on the economic development of urban areas. On the basis of an extensive literature review, we have hypothesized that the interaction of people from different cultural groups at the neighbourhood or firm level in cities will increase labour productivity in line with the concepts of Jacobs externalities and bridging social capital. For the consumption side of the model – a far less researched issue – we have hypothesized that urban cultural diversity increases the heterogeneity in the private goods provided, which will increase the utility of living in that area. This is based on the concept of 'love of variety'.

By simultaneously measuring the migrant induced urban amenity premium and the migrant-induced productivity premium, the dominant effect can be identified. This is an interesting approach which needs further research, and is a relatively new approach within the economic field of migrant studies. Future research should also focus more on the amenity effect of migrants in cities. Research on migrant entrepreneurship and clustering shows that migrants tend to supply regions with home-country goods, thus increasing the product variety. The utility that natives assign to these products is an interesting research area. The research agenda laid out in this chapter stresses that, with the use of micro-data, the disaggregate level at which the effects can be analysed is a promising development. With the use of micro-data, we can explicitly measure consumption amenities by focussing on product varieties, especially migrant induced product variety, on a neighbourhood or city level. With micro-data, the interaction between cultural groups in the neighbourhood or firm level can be measured, and thus the likelihood of Jacobs externalities can be better estimated. In this way we are better able to measure the influence of cultural diversity on location behaviour and the valuation of urban cultural diversity.

References

Abadie, A. and J. Gardeazabal (2003). The Economic Costs of Conflict: A Case Study for the Basque Country, *The American Economic Review*, vol. 93, pp. 113-132.

Akçomak, I. S. (2009). Bridges in Social Capital: A Review of the Definitions and the Social Capital of Social Capital Researchers, *UNU-MERIT Working Paper*, 2009-002.

Alesina, A., R. Baqir and W. Easterly (1999). Public Goods and Ethnic Division, *Quarterly Journal of Economics*, vol. 111, pp. 1243-1284.

Alesina, A., R. Baqir and C. Hoxby (2004). Political Jurisdictions in Heterogeneous Communities, *Journal of Political Economy,* vol. 112, pp. 384-396.

Alesina, A. and E. La Ferrara (2002). Who Trusts Others?, *Journal of Public Economics,* vol.85, pp. 207-234.

Alesina, A. and E. La Ferrara (2005). Ethnic Diversity and Economic Performance, *Journal of Economic Literature,* vol. 43, pp. 762-800.

Bakens, J. and P. Nijkamp (2010). Lessons from Migration Impact Analysis, *Revista Portuguesa de Estudos Regionais*, no. 24., pp.5-16.

Bartel, A.P. (1989). Where do the New U.S. Immigrants Live?, *Journal of Labor Economics*, vol. 7, pp. 371-391.

Bauernschuster, S., O. Falck, R. Gold and S. Heblich (2011). Explicitly Implicit: How Institutional Differences Influence Entrepreneurship, in: Crescenzi, R. And M. Percoco (eds.), *Geography, Institutions and Regional Economic Performance*. Springer, xxxxx, pp.xxx-xxx.

Baycan-Levent, T. (2010). Diversity and Creativity as Seedbeds for Urban and Regional Dynamics, *European Planning Studies*, vol. 18, no. 4, pp. 565-594.

Bellini, E., G.I.P. Ottaviano, D. Pinelli and G. Prarolo (2011). Cultural Diversity and Economic Performance: Evidence from European Regions, in: Crescenzi, R. And M. Percoco (eds.), *Geography, Institutions and Regional Economic Performance*. Springer, xxxxx, pp.xxx-xxx.

Boarnet, M.G. (1994). The Monocentric Model and Employment Location, *Journal of Urban Economics*, vol. 36, pp. 79-97.

Boarnet, M.G., S. Chalermpong, and E. Geho (2005). Specification Issues in Models of Population and Employment Growth, *Papers in Regional Science*, vol.84, no.1, pp.21-46.

Borjas, G.J. (2005). Foreign-Born Domestic Supply of Science and Engineering Workforce, *American Economic Review,* vol. 95, pp. 56-60.

Card, D. (1990). The Impact of the Mariel Boatlift on the Miami Labor Market, *Industrial and Labor Relations Review*, vol. 43, no. 2, pp. 245-257.

Card, D. (2001). Immigrant Inflows, Native Outflows and the Local Market Impacts of Higher Immigration, *Journal of Labor Economics*, vol. 19, no. 1, pp.22-64.

Card, D. (2009). Immigration and Inequality, *American Economic Review*, 992:1-21.

CCSCE (2005). The Impact of Immigration on the California Economy, *Centre for Continuing Study of the California Economy*, Palo Alto (CA).

Combes, P., G. Duranton and L. Gobillon (2011). The Identification of Agglomeration Economies, *Journal of Economic Geography*, vol. 11, pp. 253-266.

Dalmazzo, A, and G. de Blasio (2010). Amenities and Skill-Biased Agglomeration Effects: Some Results on Italian Cities, *Papers in Regional Science,* no. doi: 10.1111/j.1435-5957.2010.00327.x

Deitz, R. (1998). A Joint Model of Residential and Employment Location in Urban Areas, *Journal of Urban Economics,* vol. 44, no.2, pp. 197-215.

Econtech (2006). The Economic Impacts of Migration: A Comparison of Two Approaches, Department of Immigration and Multicultural Affairs, Kingston/Sydney.

Falck, O., S. Heblich, A. Lameli and J. Suedekum (2010). Dialects, Cultural Identity, and Economic Exchange, *IZA Discussion Paper Series*, Bonn, No. 4743.

Florax, R.J.G.M., T. de Graaff and B.S. Waldorf (2005). A Spatial Economic Perspective on Language Acquisition: Segregation, Networking, and Assimilation of Immigrants, *Environment & Planning A*, vol. 37, pp. 1877-1897.

Fujita, M., P. Krugman and A.J. Venables (1999). *The Spatial Economy: Cities, Regions, and International Trade*, The MIT Press, Cambridge.

Glaeser, E.L. (2010). The Paradox of Urban Triumph, *CPB Lecture*, June 2010.

Glaeser, E.L., H.D. Kallal, J.A. Scheinkman and A. Shleifer (1992). Growth in Cities, *The Journal of Political Economy*, vol. 100, pp. 1126-1152.

Glaeser, E.L., J. Kolko and A. Saiz (2001). Consumer City, *Journal of Economic Geography*, vol. 1, pp. 27-50.

Graves, P.E. (1980). Migration and Climate, *Journal of Regional Science*, vol. 20, pp. 227-237.

Greenwood, M. J. and G.L. Hunt (1989). Jobs versus Amenities in the Analysis of Metropolitan Migration, *Journal of Urban Economics*, vol. 25, pp. 1-16.

Groot, H.L.F. de, J. Poot and M. Smit (2009). Agglomeration, Innovation and Regional Development: Theoretical Perspectives and Meta-Analysis, in: Capello, R. And P. Nijkamp (eds.), *Handbook of Regional Growth and Development Theories*, Cheltenham, Edward Elgar, pp. 256-281.

Jacobs, J. (1961). *The Death and Life of Great American Cities*, Vintage Books, New York.

Jacobs, J. (1969). *The Economy of Cities*, Vintage Books, New York.

Longhi, S., P. Nijkamp and J. Poot (2005a). A Meta-Analytic Assessment of the Effect of Immigration on Wages, *Journal of Economic Surveys*, vol. 19, pp.451-477.

Longhi, S., P. Nijkamp and J. Poot (2005b).The Fallacy of "Job Robbing": A Meta-Analysis of Estimates of the Effect of Immigration on Employment, *Journal of Migration and Refugee Issues*, vol. 1, pp. 131-152.

Longhi, S., P. Nijkamp and J. Poot (2008). Meta-Analysis of Empirical Evidence on the Labour Market Impact of Immigration, *Région et Développement,* vol. 27, pp. 161-191.

Longhi, S., P. Nijkamp and J. Poot (2009). Joint Impacts of Immigration on Wages and Employment: Review and Meta-Analysis, *Journal of Geographical Systems,* vol. 12, no. 4, pp. 355-387.

Longhi, S., P. Nijkamp and J. Poot (2010). Meta-analyses of Labour-Market Impacts of Immigration: Key Conclusions and Policy Implications, *Environment and Planning C: Government and Policy,* vol. 28, pp. 819-833.

Maignan, C., G. Ottaviano, D. Pinelli and F. Rullani (2003). Bio-Ecological Diversity vs. Socio-Economic Diversity: A Comparison of Existing Measures, *Fondazione Eni Enrico Mattei,* working paper 13.2003.

Münz, R., Th. Straubhaar, F. Vadean and N. Vadean (2006). Costs and Benefits of European Immigration, *OECD*.

North, D.C. (1990). *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, Cambridge.

Orrenius, P.M. and M. Nicholson (2009). Immigrants in the U.S. Economy: A host Country Perspective, *Journal of Business Strategies,* vol.26, pp. 35-53.

Ottaviano, G.I.P. and G. Peri (2005). Cities and Cultures, *Journal of Urban Economics*, vol. 58, pp. 304-337.

Ottaviano, G.I.P. and G. Peri (2006). The Economic Value of Cultural Diversity: Evidence from U.S. Cities, *Journal of Economic Geography*, vol.6, pp. 9-44.

Ozgen, C., P. Nijkamp and J. Poot (2010). The Effect of Migration on Income and Growth Convergence: Meta-Analytic Evidence, *Papers in Regional Science*, vol. 89, no. 3, pp. 537-561.

Ozgen, C., P. Nijkamp and J. Poot (2011). Immigration and Innovation in European Regions, in: Nijkamp, P. and J. Poot (eds.). *Migration Impact Assessment*, by Edward Elgar (upcoming).

Partridge, M. (2010). The Duelling Models: NEG vs Amenity Migration in Explaining US Engines of Growth, *Papers in Regional Science*, vol. 89, no. 3, pp. 513-537.

Pekkala Kerr, S. and W.R. Kerr (2008). Economic Impacts of Immigration: A survey, *HBS Working Paper* 09-013.

Putnam, R.D. (2000). *Bowling Alone: The Collapse and Revival of American Community*, Simon & Schuster, New York.

Putnam, R.D. (2007). E Pluribus Unum, Diversity and Community in the Twenty-First Century: The 2006 Johan Skytte Prize Lecture, *Scandinavian Political Studies*, vol. 30, pp. 137-174.

Quigley, J.M. (1998). Urban Diversity and Economic Growth, *The Journal of Economic Perspectives*, vol. 12, no. 2, pp. 127-138.

Roback, J. (1982). Wages, Rents, and the Quality of Life, *The Journal of Political Economy*, vol. 90, no, 6, pp. 1257-1278.

Roback, J. (1988). Wages, Rents, and Amenities: Differences among Workers and Regions, *Economic Inquiry I*, vol. 26, no. 1, pp. 23-41.

Saxenian, A. (2007). Brain Circulation and Regional Innovation: the Silicon Valley-Hsinchu-Shanghai Triangle, in: K. Polenske (ed.), *The Economic Geography of Innovation*, Cambridge University Press, Cambridge.

Suedekum, J., K. Wolf and U. Blien (2009). Cultural Diversity and Local Labour Markets, *IZA Discussion Paper Series*, Bonn, No. 4619.

Steinnes, D.N. (1977). Causality and Intra-Urban Location, *Journal of Urban Economics*, vol. 4, no. 1, pp. 69-79.

Steinnes, D.N. (1982). Do 'People follow Jobs' or do 'Jobs follow People'? A Causality Issue in Urban Economics, *Urban Studies*, vo. 19, pp.187-192.

Strutt, A., J. Poot and J. Dubbeldam (2008). International Trade Negotiations and the Trans-Border Movement of People: A Review of the Literature, *Population Studies Centre Discussion Paper* no.68, University of Waikato, Hamilton.

Vermeulen, W. and J. van Ommeren (2009). Does Land Use Planning Shape Regional Economies? A Simultaneous Analysis of Housing Supply, Internal Migration and Local Employment Growth in the Netherlands, *Journal of Housing Economics*, vol. 18, pp. 294-310.

White, M.J. (1999). Urban Areas with Decentralized Employment: Theory and Empirical Work, in: Cheshire, P.C. and E.S. Mills (eds.), *Handbook of Regional and Urban Economics vol. 3*, North-Holland, Amsterdam.

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